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Trees in Winter.

TREES, to many persons, are attractive only when they are clothed with leaves, and many people whose interest in them is considerable do not notice those peculiarities which make it easy to recognize one tree from another after the leaves have fallen. But to the real lover of trees, they are equally beautiful and interesting at all seasons of the year; and no one can pretend to know trees well who cannot distinguish the different species as quickly and as easily in winter as in spring or summer. If trees are considered from an ornamental point of view only, almost every one of them has some special and peculiar beauty which is only displayed in winter. The fine spray of the Beech is seen only at this season of the year, and there is no more beautiful object in nature than the delicate ramifications of the American Beech seen against the clear blue sky of a brilliant winter day. The sturdiness of the Oak is only realized in winter, when the knotted strength of its limbs is not disguised under their covering of leaves. The Birch is a far more graceful and attractive object in winter than at any other season of the year; and what is there more stimulating to the imagination than to stand on a clear winter's day and look up into the marvelous structure of one of the great Elms which, here and there, still grow near some of our northern rivers? The bark of all trees appears, at least, more beautiful in winter than at other seasons, because the eye, undisturbed by the contemplation of masses of foliage, can then take in all the details of its varied texture and wonderful colors.

The artist and the mere lover of beauty will be well repaid by constant visits to the woods in winter; but for the student of trees—that is, for one in search of accurate knowledge concerning them—it is as important to study trees in winter as in summer. It is not easy to imagine that there are educated people in a community like this who can mistake a Birch-tree for an Oak in winter; and yet there are thousands of people who drive or walk in the parks every winter of their lives and never see the slightest difference between one mass of naked branches and another. And yet the differences between the various families of trees are clearly enough defined to make their recognition easy and fairly certain. Nor is it difficult to determine the various species when once the characters peculiar to each are fixed in the mind of the observer; and such characters are often more constant and stable than characters derived from the shape of the leaf or from the size and shape of the fruit upon which people, who are not scientific botanists, depend generally to identify any given tree. Each species of tree has its peculiar habit, which may be seen at a glance in winter, and which it retains always, unless the individual has been subjected to some abnormal conditions. The character of the bark rarely changes on individuals of the same age, although the bark of old trees is often very different from the bark of young trees of the same species. The color of the branchlets and the character of the winter-buds often afford certain means of determining closely related trees. The winter-buds are quite distinct on each of the six or seven Magnolias which grow in the American forests, and no one who has studied these trees has any difficulty in distinguishing one species from the others by a glance at a winter-bud. The winter-buds of our Hickories are all different on the different species and always constant, and as individuals of the species vary greatly in their leaves and fruits, botanists are sometimes obliged to fall back on the winter-buds in order to be certain of their determinations. And in every tree there is, in addition to its general appearance, which is in itself sufficient to make its recognition easy with a little practice, some special character which will enable the lover of trees to confirm his first impression, and to distinguish a particular species of Oak, or Hickory, or Poplar from every other.

A knowledge of trees, the ability, at least, to recognize and identify them, adds vastly to the pleasure of every one who walks abroad where they grow. One meets and greets them like old friends. Every season invests them with a new charm, and the more we study them, the greater will be our admiration of the wonderful variety and beauty which they display in winter.

The handsome Silver Fir, *Abies Veitchii*, was discovered on Mt. Fusi Yama, in Japan, in 1860, by Mr. J. G. Veitch, and was described by Dr. Lindley in the *Gardeners' Chronicle* of January 12th, 1861. Mr. Veitch, who was instrumental in introducing at that time many Japanese plants into England, did not succeed in bringing home living specimens of the Fir which commemorates his services as a botanical explorer; and *A. Veitchii* remained unknown in English gardens until 1879, when Maries, a collector sent to Japan by the Veitches, succeeded in introducing it. Mr. Thomas Hogg sent, in 1876, a number of Japanese plants to the Parsons Nurseries in Flushing, New York, and among them was a Fir to which Mr. Parsons gave the name of *Picea Japonica*, under which name he has propagated and sold it. We are able now to identify Mr. Hogg's plant with the *Abies Veitchii* of Lindley, so that the irregular and unpublished nursery name may be disposed of finally. The interesting feature in this matter is, however, that this tree, which was particularly desired in England, and for the introduction of which special efforts were made, was cultivated in this country for three years before it reached Europe, and that no one knew anything about the Flushing plant, or took the least trouble, apparently, to find out what it was.

It is, of course, too early to speak of the value of this species as an ornamental tree in this country. Mr. Hogg's plant, still in the Flushing Nursery, is fifteen or sixteen feet high, with a spread of branches twelve feet across on the ground. The foliage is thin and poor, and the lower branches are failing. The ornamental value of the species, however, cannot be judged fairly by this specimen, as it is planted in poor soil, and has evidently been starved and neglected. The smaller specimens in Mr. Hunnewell's Pinetum at Wellesley, imported from England, and in Mr. Dana's garden on Long Island, are in excellent health, deeply colored, and promise to develop into handsome

specimens. As *A. Veitchii* is a species which grows only at high elevations on the mountains of central Japan and far north on the other islands, there is no question of its hardiness. It is, according to Rein, distinguished by its red bark and by the brilliant bluish white color of the two bands of stomata on the under surface of the leaves, which give it a peculiar and striking appearance. It grows in its native forests sixty to ninety feet high, with a diameter of trunk which rarely exceeds two feet. The wood is described as moderately fibrous, splitting easily, and as being lighter and less elastic and firm than that of the Momi (*A. firma*), and therefore not as highly prized.

The result of a suit brought by the Government in the United States Circuit Court, against John R. Hite and John W. Snyder, shows the difficulty which exists in protecting the forests on the public domain of the United States, and the feelings of the people in western communities on subjects relating to forest preservation. The defendants in this suit are wealthy residents of Mariposa County, California, who had, it was claimed, been engaged in cutting timber unlawfully on Government land during the ten years between 1877 and 1887. The amount of damages claimed by the officers of the Government was $91,000. The stolen timber was sawed in a mill owned by Hite, situated about fifteen miles from Mariposa. There seems to have been no great difference of opinion on the facts in the case, and the Government had little difficulty in establishing the existence of the depredation and the employment of the timber. The jury, after deliberating for five hours, returned a verdict in favor of the Government, fixing the damages, however, at only $5,000. The letter of Mr. Shinn, on another page of this issue, should be read in the light thrown upon it by such incidents as this if we are to appreciate the full dangers to which our western forests are exposed.

"Ornamental Planting" in Paris.

So frequent is the inappropriate use in our public and private pleasure-grounds of formal flower-beds, isolated exotic plants and bright-hued shrubs and trees, that the untraveled observer may be pardoned if he concludes that Americans must be exceptionally devoid of a feeling for true landscape-art. But, no matter where his landing-place on European soil may be, the American soon discovers that his countrymen are not alone in their sins. There, as well as here, he finds some parks, where the original "natural" scheme has been kept free from inharmonious details; but many others will be found where such a scheme is ruined by the tasteless devices of so-called "ornamental planting." Indeed, certain mistakes in treatment are common abroad, which have not been introduced here, and injudicious planting is more conspicuous to-day in the pleasure-grounds of France and England than in those of America. Perhaps the most striking instance in point is that of the Parc Monceau in Paris—the most striking because the park itself, if freed from its deforming details, would be the loveliest of the smaller urban parks of the world.

The Parc Monceau lies directly north of the Rond Point of the Champs Elyseés. When first laid out in 1778 by the landscape-gardener, Carmontel, it was well outside of the city and was then considered one of the most beautiful "English gardens" in France. What remains of it to-day leads one to believe that its reputation was well deserved. A decree of the Convention in the first years of republican rule ordered the establishment, within its limits, of various buildings of public utility, but its distance and lack of easy communication with Paris preserved it from actual injury. After some changes of ownership, in 1852 it was constituted public property. In subsequent years the development of the now splendid quarter in which it lies necessitated the reduction of its area to about twenty-two acres, something less than one-half of its original size; but the reserved portion was carefully respected, and to it were transferred certain interesting architectural features that had stood elsewhere. The wide Boulevard de Courcelles now runs along its straight northern side, where a gateway, in its tall iron railing, opens between two porters' lodges. The other three sides are curved in outline, and the southern, where there are two smaller entrances, is encircled by a row of fine residences each having its small garden opening on the outer alley of the park. But what gives especial beauty and character to the Parc Monceau is the design of the two chief approaches—on the east where it is entered from the Avenue Velasquez, and on the west where the Avenue Van Dyck leads out into the wide Avenue Hoche and thus directly to the Arc de Triomphe. Each of these short avenues is planted with double rows of fine Plane-trees, and flanked by sumptuous private houses, set back in large and shady gardens. They form, therefore, approaches of much stateliness, where the effect is semi-architectural, semi-verdurous, and make an admirable transition between the rigidity of the ordinary streets beyond and the "natural" design of the park itself. Where each avenue meets the park, moreover, there is an elaborate high barrier of wrought iron, profusely gilded, with great central gates—works of the forger's art, which have become famous as among the very best produced in modern times. Between these approaches runs the main roadway of the park, gracefully curved, yet not so sinuous as to render it inappropriate as a portion of one of the main routes taken by persons driving to and from the Bois de Boulogne. About midway of its length it is crossed by another driveway running between the northern and southern gates. Otherwise there is no provision for carriages, but a sufficient number of paths open up all parts of the domain to the pedestrian, for whose use it is primarily intended. These paths are most gracefully, yet simply, laid out, and, passing now by open lawns and again under groves of tall trees, offer a grateful alternation of sun and shade. It is no wonder that the nurses and babies of the neighborhood should crowd the park on pleasant days in winter as well as spring; and there is no spot where the lover of landscape-gardening would be better content to saunter, were it not for the superfluity of minor "decorative" features which the taste of recent years has seen fit to introduce. No area of its size could be more beautiful in the modeling of its surface, sinking here into wide sloping lawns, between which runs the main drive, and rising there in gentle banks crowned by thickly planted trees, among which Planes, Horse-Chestnuts and Maples are most conspicuous. No trees of remarkable size or conspicuous beauty, as individuals, can, perhaps, be found in the Parc Monceau; the planting seems to have been done with a view to the contrasting of broad, open stretches with masses of foliage, rather than to the development of fine individual specimens of tree-growth. But, given the area of the ground and its special purpose as an umbrageous retreat in the heart of the town, the scheme is a wise one; and here and there, where the lawns are largest, some isolated groups of three or four large trees of the same kind stand where they are most effective. Through the thickly planted part of the park runs a little stream, which, near a pretty grotto and rockery, feeds an oval pond partly encircled by a Corinthian colonnade. This once formed part of a rotunda begun by Catherine de Medici at St. Denis; and not far away from it is the fragment of a straight colonnade which once formed part of the old Hotel de Ville of Paris. These architectural relics do not injure the natural effect of the park, for, thickly shaded and draped with vines, they look like the remains of charming pavilions or covered walks designed for the repose of the pedestrian. They add, indeed, to the romantic effect of the scene and cannot be called inappropriate, since it is confessedly an urban and not a rural pleasure-ground.

But how the hand of the gardener has defaced this charming park! All along the borders of the roads and paths formal flower-beds of large size and crude color are thickly distributed; the rising banks are spotted over with little specimen evergreens, Palms and exotic flowering plants of many sorts; the bases of the trees which stand on these banks are smothered in big beds of Geraniums or tuberous Begonias; an immense bed of purple-leaved shrubs, surrounded by sickly white-leaved Negundos, lies on one side of the main drive, forming a discordant spot; the isolated trees on the lawns are encircled by flower-beds, and even the isolated exotic plants which are placed near them—as if they were not obtrusive and discordant enough in themselves—are surrounded in the same way. A tuft of Pampas grass, which would be far better away, is rendered doubly bad by its ring of Geraniums, or a wide-leaved Palm overshadows a circle of crimson Coleus.

But worst of all, perhaps, is the way in which the shrubberies are treated. Instead of the shrubs being allowed to droop naturally in a varied outline upon the grass, they are trimmed to allow a flower-bed about a foot wide to run in a straight line along their base, and this bed is filled with rigid rows of gaudily colored plants. Nothing could be more uncalled for than this intrusion of "ornamental" plants between the grass and the shrubs, which, if left to themselves, might effect a beautiful union; and nothing could be worse than the look of

he stiff line of color between the soft green masses above and the soft green expanse below. Not only on the path side of the shrubberies, however, but even on the lawn side this feature is constantly introduced; and we see the same thing to-day almost everywhere in France and England, and in private as well as in public gardens. Fortunately the fashion has not yet been taken up in America, and it is to be hoped that it will never cross the sea.

As the Parc Monceau was designed it was a spot of the utmost unity of effect, restfulness, gracefulness and charm. There are a score of spots within its borders from which might be obtained vistas of sloping greensward and feathery shrubbery and overarching tree-tops that could not be surpassed for harmony and loveliness in any park in the world; and the aspect of breadth and openness secured in so small an area, with so entire a concealment of the surrounding streets, must have seemed indeed a triumph of art. The practiced eye can still read these charms under the disfigurements of to-day; but it reads them with perpetual irritation and protest; for there is no standpoint whence the prospect in every direction is not marred by obtrusive spots, lines and solid masses of color, and by inharmonious plant forms; not a nook so rural that the spade of the potter-out has respected it; not a fair stretch of lawn which is not broken and speckled with "specimen" plants of a dozen sorts; not a shrubbery, and scarcely a conspicuous tree, which is allowed to spring naturally from the turf at its base. The most exacting landscape-painter might once have found many subjects for his pencil here in the heart of Paris; the least exacting could not paint a bit of the Parc Monceau to-day without omitting a hundred offensive details. The effect is all the worse because nothing needs to be planted, nothing permanent needs to be altered. The simple rooting out of a myriad ephemeral plants would at once restore the domain to perfect beauty.

The River Birch.

THE charm of the banks of many streams in the United States is due in large part to the presence of the River Birch, which graces them with its peculiar beauty, and which is not only one of the most beautiful trees of the American forest, but one of the most interesting. It is interesting because of all the Birches, a family of trees widely scattered over all the colder parts of the northern hemisphere, it is the only one which grows in a warm climate. There are Birches, perhaps, which grow nearer to the equator than our River Birch, like some of the East Indian species, but these are found at great elevations only on high mountains, and, therefore, in boreal climates, while the River Birch flourishes in the damp, semi-tropical lowlands of Florida, Louisiana and eastern Texas. It is peculiar, too, among Birches in the season of the year when its seeds ripen. The seeds of other Birches ripen in the autumn, fall to the ground, and do not germinate until the following spring. The seeds of the River Birch mature in June, or often earlier in the southern states, and germinate at once as soon as they reach the ground; and the young seedlings are often a foot or more high before the coming of cold weather stops their growth.

Several of our trees which grow in wet places naturally have acquired this habit of early ripening of the seed. It is the habit of nearly all the Elms, and of the Poplars, and of the Red and White Maples, although the other Maples, which grow naturally on dry ground, do not ripen their seed until late in the autumn. This early ripening of the seeds of certain species only of particular genera can be accounted for by the situation in which such trees grow. The River Birch is found on the borders of streams or swamps which are covered often with water to a depth of several feet during a part of every year. The Red Maple and the Silver Maple and the Poplars grow only in swamps or other wet places. If the seed of these trees ripened late in the autumn, when streams and swamps are full, they would fall into the water and would be washed away or destroyed, and this particular species of tree would have been exterminated gradually; but falling as they do in early summer, when the soil which receives them is neither covered by water nor dry and baked by the droughts of the hot months, they are placed in the most favorable situation possible for germination; and the young plants are able to acquire sufficient height and strength before autumn to bear, with a good chance of survival, the effect of being flooded during their first winter.

There is an interesting fact, too, and one which is not easy to explain, connected with the geographical distribution of the River Birch. It is found on the banks of the Merrimack and of the Spicket Rivers in north-eastern Massachusetts. Here it grows luxuriantly and abundantly, but it grows nowhere else in New England, or anywhere else as far north as Massachusetts. It grows on the banks of one small stream on Long Island, but nowhere else in New York, and it only becomes common in the lower part of New Jersey; but from southern New Jersey to Iowa on the west, and to northern Florida and eastern Texas on the south, it occupies the banks of almost every stream, excepting those in the high Alleghany Mountains, which have a gravelly bed and banks which are not marshy. There is no tree so rare and local in New England and the northern states, and none in the particular situations it selects more common in the middle and southern states.

The River Birch is a tall tree, eighty or ninety feet high when it is at its best, with a ponderous trunk three or four feet in diameter. The bark on the trunks of old trees is thick, dark brown and deeply furrowed, while that on young trees, with a trunk diameter of not over ten or twelve inches, and on the branches, is light red or cinnamon colored, dividing readily into thin, transparent, papery layers. It is this color of the bark of the branches, peculiar to this species, which has caused it to be called also the Red Birch, although by a curious misapplication of names this tree is known to botanists as *Betula nigra*. The ultimate divisions of the branches, as is the case with all Birches, are slender, pendulous and graceful, giving to this tree in winter that light and feathery appearance which makes it such an attractive object at this season of the year, as it pushes its branches out over some deep, swift flowing stream. The leaves of the River Birch are large, sharply toothed and pointed; they are bright and lustrous on the upper surface and pale on the lower, and in autumn turn bright yellow before they fall from the branches.

The wood produced by the River Birch is light and strong; it is easy to work, of good color, and well suited for furniture of the best quality, which has of late years been made from it in large quantities in some parts of the country. As an ornamental tree for the decoration of parks, the River Birch has much to recommend it. It grows rapidly when removed from the banks of its native streams to drier soil, and may be depended on to develop in a short time into one of the most beautiful of deciduous trees. It is not a common tree, however, in cultivation, in spite of the fact that it was one of the first American trees cultivated in Europe, having been planted in England as early as 1736, and its value and beauty are not known or appreciated by the present generation of tree-planters. Large specimens may be seen occasionally in some of the old European parks, especially in those of northern Germany; but it is practically unknown in those of this country or of England; and yet there is no tree better suited to place on the borders of ornamental water, and there is none which, in such a position, is capable of adding more grace and beauty to the landscape.

The picture of the group of River Birches in Massachusetts in winter, which appears on page 593 of this issue, shows the beauty of this tree at this season of the year, and serves to illustrate the fact, already stated on another page of this issue, that trees are as beautiful in the eyes of the real lover of trees in winter as they are in summer, and that there is much to learn by studying them at this season of the year, when their whole anatomy is made clear by the absence of their leaves.

Our illustration is prepared from a photograph by Dr. William Herbert Rollins, of Boston, to whom we are indebted for permission to reproduce it. *C. S. S.*

New or Little Known Plants.

The Last Addition to the Shrubs of Eastern North America,

(Croton Alabamensis.)

THIS plant, the rarest and most beautiful of the Crotons found within the limits of the United States, was first brought to the notice of botanists by Professor Eugene A. Smith, who found it in the summer of 1877 near Pratt's Ferry, Bibb County, Alabama, not far from the eastern bank of the Little Cahaba River, the principal upper tributary of the Cahaba, where it forms dense and almost impenetrable thickets, many acres in extent, in the Oak forest covering the base and flanks of the old-silurian limestone hills which skirt the valley. The soil and the rocks, scattered widely over this valley, are covered under the deep shade of shrubs and trees with a cool, dark carpet of mosses, studded with numerous Ferns, the sombre green relieved in some exposed spots by the pale purple flowers of the delicate *Sedum Nevii*, the rare *Gatesia læte-virens* and several shade-loving Desmodiums. When I first visited this locality in the fall of 1882, in a vain search for seeds of the Alabama Croton, I was repaid by the discovery, among the White and Chestnut Oaks overshadowing it, of the then little known *Quercus Durandii*, first observed in this state in 1840 by Mr. S. T. Buckley, who subsequently described it from specimens gathered by him in Texas. The exact habitat of this rare tree east of the Mississippi River had remained, however, unknown up to the time of my rediscovery of it in the valley of the Little Cahaba River.

There are only at this time a few of these thickets of the Alabama Croton, called by the inhabitants of the region "Privet brakes," known, and these are all found close together; and it is probable that it does not extend beyond a territory a few miles square.

Croton Alabamensis,* when fully grown, reaches a height of six to ten feet, with upright, or slightly bent, stems one and a half to two inches in diameter, covered with grayish white bark. The rigid, widely spread branches are rather naked, the foliage being confined to the terminal branchlets, which only appear at some distance from the ground. The stem and branches of young plants, however, are covered with leaves and flower-bearing lateral branchlets, and are then almost hidden with their dress of silvery white and brilliant green foliage. The leaves are destitute of glands and are subtended by small exceedingly deciduous stipules; they are oblong-lanceolate, obtuse, entire, deep green on the upper surface, the lower covered with a dense tomentum of shining silvery scales, as are the short petioles, young shoots and the inflorescence. The leaves are persistent, remaining on the branches through the winter, and are then gradually replaced during the succeeding season by a new crop produced from early spring to the end of autumn. The flower-buds begin to appear soon after the ripening of the fruit in early summer; they are placed in axillary recemes from an inch to an inch and a half long at the time they open, which is from early February to the middle of March. The small whitish flowers are short pediceled, with a calyx of five broad acute sepals, a little longer than the five narrow petals, and alternating with the oblong glands at their base. The deep yellow anthers of the fifteen or twenty stamens, arranged in alternate sets of five in the crowded male flowers, make the inflorescence somewhat conspicuous. The female flowers, fewer in number, occupy the lower part of the raceme, their hairy ovary bearing three small, flat, somewhat emarginate stigmas. The male flowers soon fall after pollination, when all parts of the female flowers increase rapidly in size, the racemes growing to more than double their original length. The fruit ripens from the latter part of April to the end of May; the carpels, when fully mature, separating by the slightest touch, splitting dorsally and discharging their seeds with some force. This habit will account for the difficulty I have experienced in procuring a supply of seeds, for which I have made two fruitless excursions.

The Alabama Croton is not a rapid growing plant. According to Professor Smith's observations, seedlings of the second season, and about eighteen inches high, transplanted from the forest in 1880, have now attained a height of seven feet, having made a growth of about five feet and a half, the largest stems having a diameter of one and a half inches. These plants began to flower when they were two feet high, and at that time were covered with numerous lateral branches. During succeeding years the growth was principally upright, and the plants at present have no lateral branches on the lower part of the stem. No effort has been made to propagate this plant by layers or by cuttings.

The original forest-growth, which still covers the limited area upon which the Alabama Croton is found, is, in this day of rapid development of the timber and mineral resources stored up in this secluded part of the country, liable to early destruction, and the survival of this typical Alabama plant in its native home is, at best, uncertain, and will, in all probability, be of short duration. It is only by cultivation, therefore, that the continuation of this species can be secured; and to this it is entitled, not only as a rare production of the vegetable world, possessing many points of scientific interest, but also for its value as an ornament for the garden and the park. There is little doubt that its cultivation, with slight protection during the winter in higher latitudes, can be made successful, and that it will thrive in the Atlantic states as far north as New England.

Croton Alabamensis belongs to the sub-genus Eluteria, and its nearest relative in the United States is *Croton argyranthemum* of the south Atlantic states, and, as Dr. Chapman has pointed out to me, it is very closely related to an extra-tropical species of southern Brazil, which differs from it slightly in specific characters.

Mobile, Ala. *C. Mohr.*

* "C. Alabamensis, E. A. Smith (ined.).—Stem tall, woody, much branched; leaves thin, short petioled, oblong-lanceolate, mostly obtuse, smooth or nearly so above, the lower surface, like the branchlets and racemes, coated with silvery scales; racemes often unisexual, few or many flowered; calyx-lobes five, acute; petals of both sexes scarcely shorter than the calyx, woolly-margined; stamens twenty or more; styles simple, truncate or emarginate; capsule much longer than the calyx; seeds glabrous. Central Alabama, flowering throughout the year. Stem, six to ten degrees high. Leaves, two to three inches long." Chapman, *Fl. S. States, Suppl.* 648.

Chrysanthemum, Mrs. Andrew Carnegie.

THIS is a seedling raised from Duchess, with Cullingfordii as the pollen parent. Out of twenty-five seedlings from this same cross, several had distinct crimson flowers, but were not of sufficient merit to justify their distribution, while the one in question I consider the best crimson variety of the type known as Japanese. The Mrs. Carnegie requires particular treatment to bring out the true shape and coloring of the flower. It should never be forced into rapid growth, but should be grown slowly from the start. The plant should be exposed to the sun after the 1st of September and should not be removed to the green-house until freezing weather threatens, and after that it must not be subjected to more artificial heat than is necessary to protect it from frost. A dry atmosphere, too, is of the greatest importance, as the least moisture on the florets after they begin to unfold causes them to damp or mould.

Pearl River, N. Y. *John Thorpe.*

Cultural Department.

The Shrub-Garden in November.

THE garden in November is not always destitute of interesting or beautiful objects, as is commonly supposed, and, under ordinary circumstances, there are many plants which well repay examination at this season, when nearly all vegetation seems to have lost activity and life. In the latter part of the month, or Thanksgiving week, in New England many a pretty bouquet can often be made from the flowers and fruit which may be found in the open garden or in sheltered corners.

It is at this time that the value of woody ornamental plants

Fig. 149.—The River Birch in Winter.—See page 591.

shows to advantage when compared with the annuals or perennials. It is true of our woody plants that the flowers which several species bear at this season are usually not due to appear before April or May, but a few blossoms are almost invariably produced at the time when the leaves are falling or after a succession of mild days in winter. An exception to this rule is the Witch-Hazel (*Hamamelis Virginica*), the normal blooming season of which is in October and November, the time varying greatly, according to situation and exposure, so that flowers may be found in winter or very early spring.

This plant, which should be in every shrub-garden, has an added interest from the fact that it well illustrates one of Nature's many beautiful ways of scattering seeds. The fruit ripens as the plant comes into bloom and the woody capsules open and disclose the oblong shining black seeds. As the capsule dries the lower edges contract and press against the sides of the tapering seed, which, suddenly breaking loose from its attachment at the base, is thrown with the velocity of a bullet for a distance of ten or twenty feet or more from the parent plant.

Against sheltering walls flowers in considerable numbers may still be found on Hall's variety of *Lonicera Japonica*, and a very few blossoms of the spring flowering bushy species, *L. fragrantissima* and *L. Standishii*, occasionally open before all the leaves have fallen, and they are just as fragrant as they would be if not developed until spring. These two species retain their leaves longer here than any others of the genus except *L. Japonica* and its varieties, which are almost evergreen. Among other spring blooming shrubs a few yellow flowers of the Forsythia can be found, and in the *Ericaceæ* open blossoms of *Andromeda floribunda* and *Erica carnea* may be discovered during the late autumn and under the snows of winter, while the last species is one of the first shrubby plants from which bees collect nectar in the spring. *Daphne Cneorum* bears a second crop of small clusters of blossoms during the autumn, and, if with *Vinca minor* it is somewhat protected from severe early frosts by sheltering trees or buildings, a bunch of the purple flowers of the Vinca and of its white variety, may be made fragrant by stray sprigs of the Daphne.

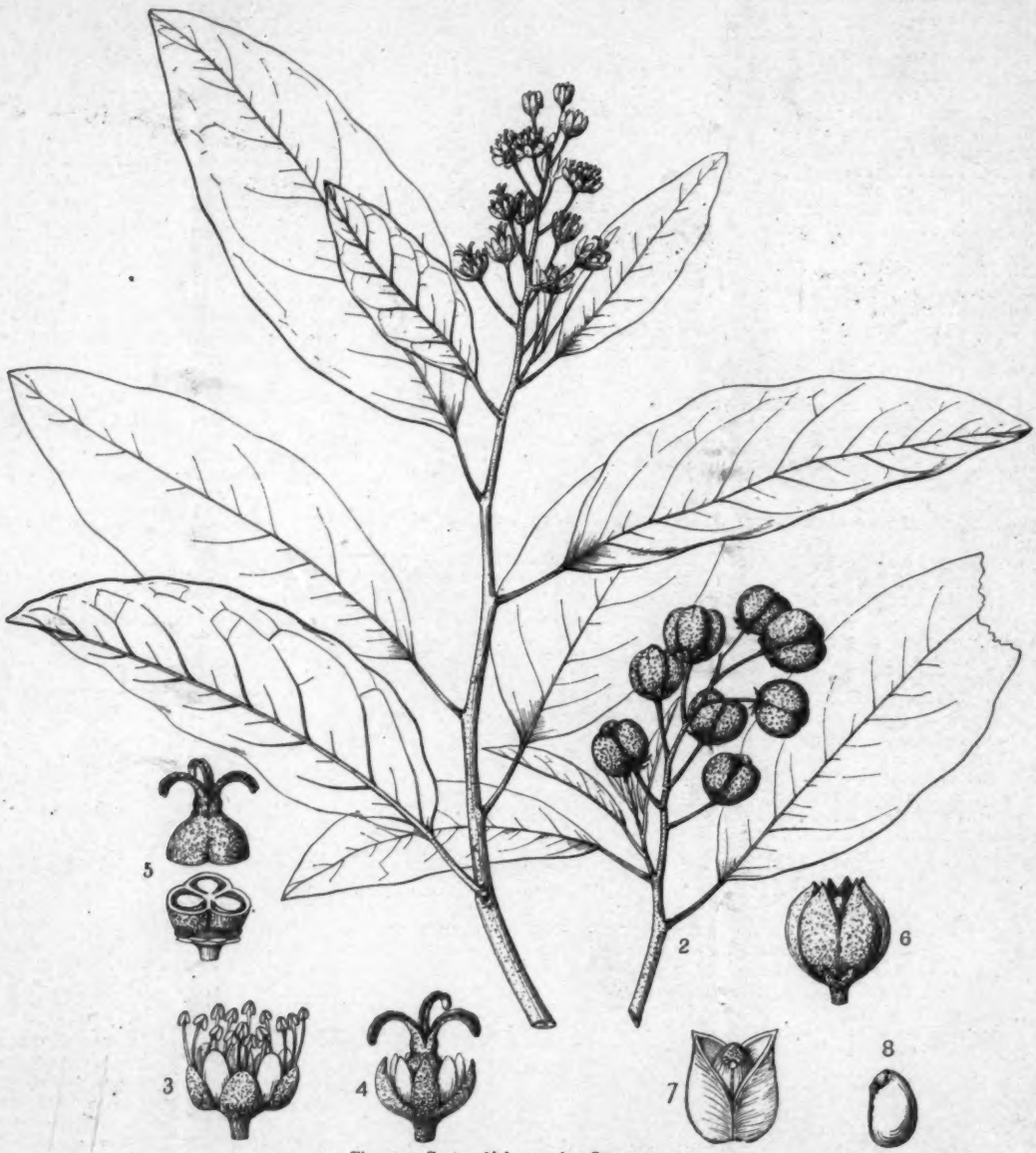

Fig. 150.—Croton Alabamensis.—See page 592.

1. Flowering Branch. 2. Fruiting Branch. 3. Male Flower, enlarged. 4. Female Flower, enlarged. 5. Pistil cut across, enlarged. 6. Fruit, enlarged. 7. Ventral view of a Coccus, enlarged. 8. Seed, enlarged.

Spiræa Thunbergii is the last of its genus to lose its bright autumn foliage and its early spring flowering habit is often indicated by a profusion of small white blossoms during mild periods in November.

But it is those species of shrubs which, having lost their foliage, retain their fruit in its original plump and bright condition, that give the most satisfaction at this season.

Some of the bunches of fruit of *Lonicera Sullivantii* (commonly grown as *L. flava*) still retain much beauty, although many of them have become dry and shriveled. The Cranberry-bush (*Viburnum Opulus*) holds its fruit, which is somewhat duller than before frost; and the long, slender stems of *Lycium Chinense* remain covered with bright scarlet ovate fruit.

The bright red fruit of our native Black Alder or Winterberry (*Ilex verticillata*) can hardly be surpassed in some respects, but in some districts it is liable to be eaten early by birds, while in other places it may remain on the plants all winter.

Among all the conspicuous fruit-bearing plants, the Japanese *Berberis Thunbergii* seems one of the handsomest and most satisfactory. The bright red fruit, thickly set along the branches of this Barberry, remains full and fresh-looking until spring, and well laden branches, if cut off and dried for in-door decoration, retain their beauty for a long time. The plant is now becoming well known and commonly advertised, and it is likely to be quite popular as a low hedge plant. The fruit of some other Asiatic species or varieties still retain a little beauty, but most of it has become much shriveled and lost its early brightness.

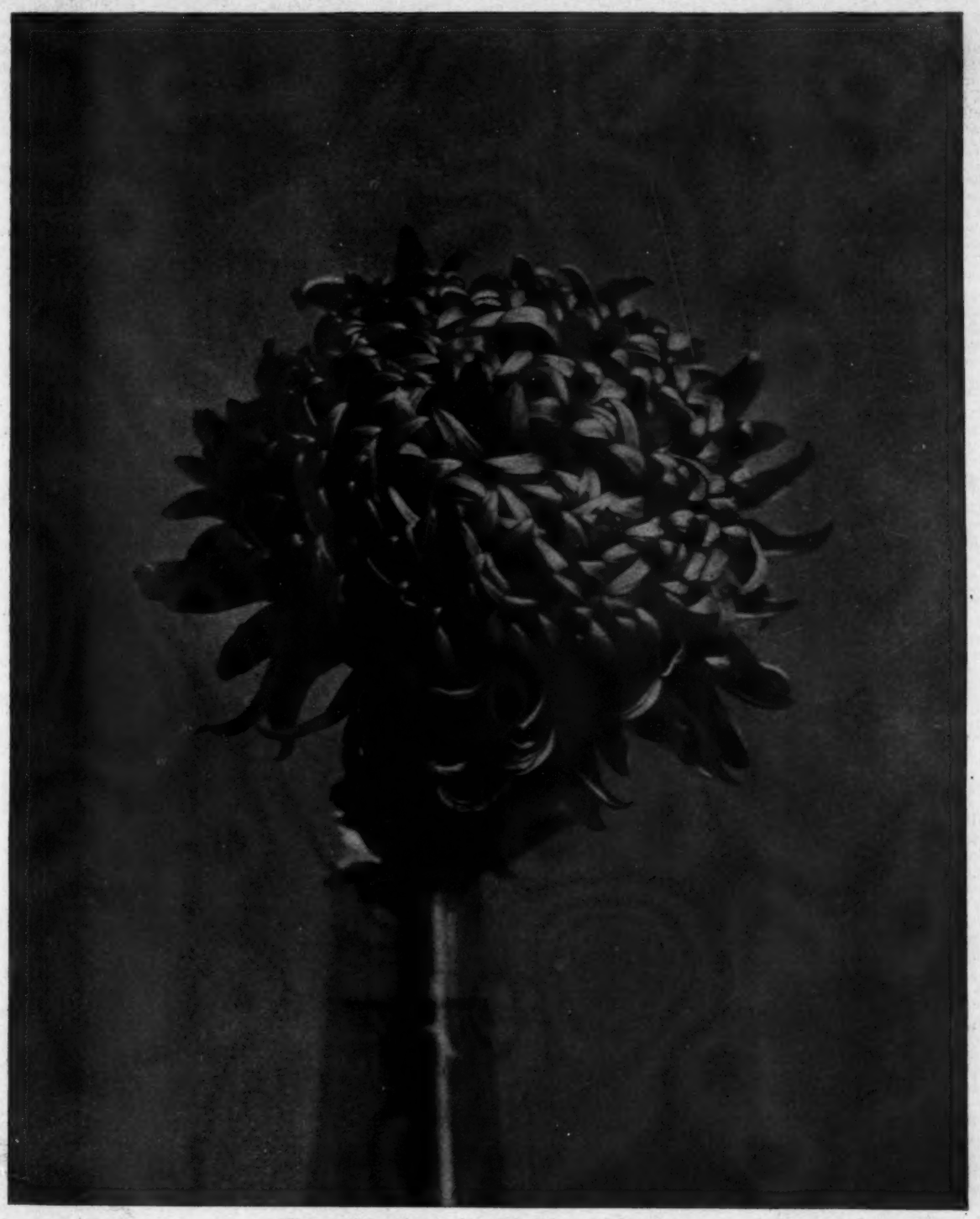

Fig. 151.—Chrysanthemum, Mrs. Andrew Carnegie.—See page 592.

Crataegus pyracantha, the Evergreen Thorn of southern Europe, which is not very hardy in this latitude, still retains all of its shining green leaves, and the birds have not yet devoured the bright scarlet fruit, which is quite pleasant to the taste. The Washington Thorn (*C. cordata*) is almost the only other species whose fruit retains its brightness and is persistent through most of the winter. The fruit of the European Spindle tree (*Euonymus Europæus*) ripens late, and just now the orange colored arils are very showy, although the pods have dried and lost much color. This species is more showy at this time than the native Burning-Bush (*E. atropurpureus*). No list of bright fruiting plants is complete without the Waxwork or climbing Bitter-sweet (*Celastrus scandens*), with its bunches of bright scarlet fruit, which often take a conspicuous part in New England Thanksgiving and Christmas decorations. It should be propagated from plants which are known to fruit abundantly. *Celastrus punctatus*, a Japanese species, is also very ornamental, although the fruit is small and is borne in small, loose, scattered cymes, a character which gives it quite a different aspect from the close, raceme-like bunches of our native species.

The Rose family also contains many plants well known for their showy fruit of late autumn and early winter. Perhaps the most valued of these is the large-fruited Rowan-tree (*Pyrus aucuparia*) of Europe and our own Mountain Ash (*P. Americana*). A dwarf species of the same genus, *P. arbutifolia*, var. *erythrocarpa*, still holds its very dark red fruit in a firm and fresh state. Some of the native and foreign wild Roses still retain their fruit in an attractive condition, varying in color from red to brown or black. Several species of Cotoneaster are deserving of more general cultivation, either for their showy fruit or evergreen habit. The Snowberry (*Symphoricarpos racemosus*), so common in all old-fashioned gardens, is interesting for its large, white fruit, which is unique at this season. The Indian Currant (*Symphoricarpos vulgaris*) has considerable ornamental value, and its long, slender branches, covered with small, fresh, dark red and magenta colored berries, are in their best condition at this date.

The evergreen Bearberry (*Arctostaphylos Uva-ursi*), with its deep red fruit, and the Aromatic Wintergreen or Checkerberry (*Gaultheria procumbens*), have not yet become thoroughly domesticated, although the Bearberry grows and thrives very well in some situations under cultivation. The bright scarlet, spicy berries of the Checkerberry are commonly found in the market at this season.

Shrubs which have bright colored stems and branches also contribute greatly toward lighting up the landscape at this season, but mention of them has been omitted from this list because the colors of most of them become more intense after the snow falls and as the winter advances.

Arnold Arboretum. *J. G. Jack.*

The Roses of the Year.

THE list of new Roses for 1888 and spring of 1889 was an unusually large one, about equally divided between the Hybrid Perpetuals and those known as Ever-bloomers in this country, including Teas, Polyanthas, Hybrid Teas, Noisettes, Bourbons and Chinas. It is impossible to determine the value or quality of a Hybrid Perpetual with a single summer's trial, but my notes made in England and on the Continent during August last may indicate varieties that will probably prove useful in this country. Oscar II., King of Sweden, was introduced by Soupert et Notting, of Luxembourg. Color is the remarkable feature about this Rose, it being a maroon-brown; or, to put it another way, a brown-crimson. A strong, vigorous grower, with large leathery foliage, it produces flowers quite double and of fair form. It has a rival in Sir Rowland Hill, an English introduction of the previous year. This is a fine, erect grower, and, if vigorous enough when grown on its roots, will be much sought after when known in America. It, too, is a maroon-crimson, with just enough lustre to light the flower up nicely. It is similar to Duke of Edinburgh in habit and form. Both the above Roses are decided departures in color, and from what I saw of them they appeared very free in the production of flowers. Caroline D'Arden, raised by Dixon, of Langport, Ireland, is a Rose of much promise from its sturdy habit and fine, open-faced flowers, which are produced in abundance when the size of the flowers is taken into account. It is of a bright cherry-rose, one of those appealing tints that one cannot help liking. Countess d'Eu (Verdier) is a fine globular flower of a bright cerise-rose color, flushed with vermilion. It is a Rose of excellent shape and a fascinating color. Marquis of Salisbury, raised by Levêque, is of a bright rose-crimson, shaded with silver. Its attractive color, with its fine shape and great masses of flowers, impressed me greatly.

Duchess of Albany and Duchess of Leeds, both English-raised Roses, are classed as Hybrid Perpetuals in Europe, but they are both bred like the well known La France. The first is a Rose of decided value. As seen growing with the originators, Messrs. William Paul & Son, it was all that could be wished for, being larger in size, deeper in color and stronger in growth than its parent, La France. Duchess of Leeds, at certain stages of its development, is finely colored, and has a bright, crisp appearance. Its weak point is its slaty or dead pink color when fully expanded. The outer or reverse side of the petals is always of good color. To my notion it is a good, useful Rose, but would not please the fastidious on account of its short petals and ashen color when fully open. The two sports from Lady Mary Fitzwilliam, White Lady (Paul) and Maid of the Mist (H. Bennett), are very fine as seen growing and flowering in the genial climate of England, but are of no use here on account of their inability to withstand the fungoid disease commonly termed Black Spot. One of the finest Roses in England is the parent of these two white sports, but it is valueless here on account of the disease mentioned. Cheshunt Scarlet (George Paul) is a brilliant crimson-scarlet, and the nearest approach to a pure scarlet of any Rose we know. It is from that splendid race of Roses beginning with Duke of Edinburgh and running through most of the seedlings raised at the Cheshunt Nurseries. It is semi-double, with broad petals, and will make up in color for deficiencies in other directions. Marchioness of Lorne, as grown at Waltham, is very nearly an ideal Rose; splendid in form, bright crimson-rose in color, sweet-scented, producing its buds and bloom with a lavishness unknown to most Roses of its class. Unfortunately, it does not maintain its perpetual flowering character when transplanted to American soil, as plants introduced last spring behave like all other Remontants. The Roses mentioned above are likely to prove valuable, and are distinct enough from existing kinds to warrant a trial on this side the water.

Count Henri Rignon is a fine, distinct Hybrid Tea, raised by Pernet, of Lyons—a grand Rose, as seen in the gardens in the south of France, and it gives much promise on this side of the Atlantic. It is equal to American Beauty in size, but of a light, silvery flesh tint, which is decidedly pleasing. Our growers might try forcing this variety in the way that American Beauty is grown. It would sell if well done. Ernest Metz, a large silvery pink flower, tinged with flesh color, of extra large size, and Madame Pierre Guillot, a rose of the Watteville type, are the two most promising Teas of the year; and for bedding purposes in the open ground they will please the fancy of critical rosarians. They are the product of that cautious and conscientious man, M. Pierre Guillot, of Lyons, who has done more, perhaps, than any other one man to enrich our gardens with good varieties.

We are testing other varieties of Tea Roses, but the propagator's knife has despoiled them to such an extent that they must wait until we can judge them properly. I might mention The Queen, raised in this country, a sport from that old favorite, Souvenir d'Un Ami, and a fine Rose for bedding in the open ground; Clotilde Soupert, said to be a hybrid Polyantha, is, perhaps, the Rose of most value on this side, out of the many introductions of 1889. It is nearly the size of the fine Hybrid Noisette, Boule de Neige, but differs from that variety in being short-jointed and truly perpetual, as much so as any of the common Chinas. It also promises to be hardy in our northern climate, and if so it will be of great value. Whether it is a Polyantha or a Hybrid Noisette, matters little if it continues to do as it has done the past summer. It was raised by Soupert et Notting, Luxembourg, who declare it a true descendant of the Japanese Fairy or Polyantha Roses.

Richmond, Ind. *E. G. Hill.*

Chrysanthemums in 1889.

THE record of the year, so far as the introduction of new varieties of great promise goes, has not been an encouraging one.

A larger number of new kinds than has ever before been offered appeared in the spring catalogues of growers in America and Europe; and, with very few exceptions, the experience of this season will probably strike from the list nine-tenths of them as not having sufficiently distinct qualities to justify their propagation. Some allowance should be made for the unfavorable influences of an exceptionally bad season for plants grown in the open ground. But the new flowers are not, in themselves, either in form, color or substance, marked improvements on those already in existence.

Mrs. A. Hardy, the principal novelty of the year, notwithstanding its apparently great vigor of growth, has not done

well; not a plant of it was shown at the Chrysanthemum Exhibition of the Massachusetts Horticultural Society. The flowers, however, were shown, and have the same attractive qualities that excited so much enthusiasm last year. There has also been exhibited this season, under the name of Louis Böhmer, a flower having the hairy petals peculiar to Mrs. Hardy; the color of the flowers, however, is a dull pink, not at all pleasing, at least in the specimen shown at Boston. Whether Louis Böhmer is a sport from Mrs. Hardy or an original seedling imported from Japan was not stated.

Messrs. Pitcher & Manda have received, in a recent importation from Japan, among some very promising Chrysanthemums, another specimen of Mrs. Hardy. Among the seedlings of this variety raised by Mr. Manda, and shown by him during the season, there has been no appearance of the hairs. One of the seedlings, named Bohemia, is a large, dark flower of decided promise. Strangely enough, there does not appear to have been any sport from Mrs. Hardy, though the unusually large numbers of that variety, which have been grown this season, would lead one to expect this not unusual occurrence.

Of the varieties of recent introduction the following may be noted: Alcyon, Délie, Superbe Flore, Madame Pépee, Val d'Andorre, Ed. Audiguier, W. H. Lincoln, L. B. Bird and John Thorpe, all Japanese, have done well; Mrs. G. Wright, Avalanche and Condor are three good whites of the reflexed Japanese type; Mrs. H. Cannell, white, incurved Japanese, has not done well, while Mr. H. Cannell, though not a very free flowerer, appears to be a real addition to the large yellows of the old Grandiflorum class; Mrs. N. Davis, a yellow sport from Princess of Teck, has all the good qualities of one of the best of the large incurved Chinese kinds; Marie Ouvray has not shown itself to be a valuable addition to the long list of early flowering varieties of more or less distinct violet shade; M. Garnier, a Japanese, with yellow ground, shaded and striped brown-red, is a fine variety; Souvenir d'Alfred Motte, reflexed Japanese of a peculiar color, magenta and buff, is worth adding to a large collection, and so too is Mrs. Falconer Jameson, one of Cannell's new varieties, a flower colored buff and red, with yellow points; La Tosca, Japanese, fiery crimson, striped brown, though a small flower, is good and distinct; Cythère, of the same class, purple-amaranth and shaded dull red, is also good; Magicienne, Japanese, color chamois with light rose tints, is a large and early flower; Vieil Or, though very rich in color, is too flimsy in substance to be useful; Étoile de Lyon, a deep lilac-rose, margined with silver, of large size, though it has not done well here, has succeeded so well on the other side of the ocean that it should be given a second trial.

The incurved Chinese flowers have fallen into undeserved neglect in later years here, and the few valuable additions to this class have not attracted the attention due them. One of the best of these new-comers is M. Roux, a seedling raised by Boucharlat and introduced in 1884. It has retained, even this year, its good qualities of a low habit of growth and well shaped, closely incurved flowers of a bright chamois yellow. Ralph Brocklebank, a yellow sport of the old variety Meg Merrilies, has the same serious defect, a dark centre.

The seedlings of the year, of American production, are not very numerous, nor are they, as a whole, very promising. They have generally been exhibited as single large flowers grown to the fullest size that high cultivation can give them. It is not easy, therefore, to say how valuable they will prove for general cultivation. It is, unfortunately, true that many of the best new seedlings have been plants of bad constitution, capable of yielding, in the hands of expert gardeners, wonderful results, but comparatively valueless for the average grower. Some most remarkable flowers, exhibited at the Boston show by Mr. Brydon, gardener to Mr. Simpkins, were largely of this class. Better flowers were never exhibited here, and, probably, better could not be seen on any exhibition table in the world; but if the ordinary grower should select these plants for his own collection he would inevitably be disappointed in the results of his cultivation.

Mrs. Andrew Carnegie, one of last year's seedlings, was shown by Mr. Brydon, in good form and bright color, but the same flower, as exhibited by other growers, was dull and unworthy of its reputation. Ada Spaulding is not attractive in color, at least was not so at the Boston exhibition, and is no better in size and form than many more highly colored flowers already in the market.

The other conspicuous seedlings of 1889, so far as they have been seen, must, in my opinion, await the results of another season's cultivation before they can be awarded a very high place on the list. *H. P. Walcott.*

Cambridge, Mass.

Orchid Notes.

Trichosma suavis.—This is one of the most attractive Orchids in flower during the months of October and November. From a botanical point of view, it is allied to Eria and Cœlogyne, but more closely to the former genus than to the latter, and we find that it was formerly known under the names of *Eria suavis*, *E. coronaria* and *Cœlogyne coronaria*. It is a native of the Khasya Hills, where it was discovered, and from thence introduced, in 1837, by Gibson, who was traveling in that locality for the Duke of Devonshire, whose place at Chatsworth was interestingly described in this volume of GARDEN AND FOREST, on p. 506.

This species, which, by the way, is the only one yet known, grows vigorously and flowers freely. Its green and succulent terete stems are about two-thirds as thick as an ordinary lead pencil and about a foot high, with two oblong-elliptic, acute leathery leaves at the summit, whence emerges the peduncle, bearing from five to eight fragrant flowers, each borne on a pedicel about an inch long. The creamy white sepals and petals are about an inch long and broadly lanceolate in shape, the two lateral sepals being connate at the base, forming a kind of pouch. The white lip has three lobes, the lateral ones being erect and handsomely striped with dark reddish crimson, which circumstance reminds one of its relation to Cœlogyne. The middle lobe is recurved, bright yellow, with from five to eight narrow, undulating, elevated keels in front of two pure white raised crests, which run parallel to the base; and the column is greenish white behind, streaked with dark crimson in front. I have seen a so-called variety, Bella, in nurseries, which is supposed to have richer colored flowers than the type.

This plant is somewhat scarce, but it is well worth a place in every collection on account of its masses of dark green foliage, which form an excellent background for the trusses of creamy white flowers. It may be grown in the cool end of the Orchid-house, in a compost of fibrous peat and moss, and the pots must be well drained. When in active growth the plants may be liberally watered, and at other times require more or less attention in this respect, according to atmospheric conditions; but it will be found necessary never to let the plants get too dry at the roots, as they have no pseudo-bulbs to serve as a reservoir for moisture. *John Weathers.*

St. Albans, England.

Dendrobium bigibbum is a very handsome species, much resembling *D. superbiens*, and certainly one of the handsomest of the Australian kinds. It is a rather dwarf growing plant, producing slender fusiform stems, about nine inches long, from which spring peduncles bearing racemes of rich, rosy purple and very broad-petaled flowers. They oftentimes continue to throw out these racemes from the same stems for several successive years. We grow this plant in *Cattleya Trianæ* house, suspended from the roof, where it gets abundant light and sunshine. It does best here in small cribs, with a little sphagnum moss and charcoal and a good supply of water when growing. We never allow it to become dry enough to shrivel, as it is with difficulty restored; but it likes a period of rest, as it appears to grow much more freely afterward.

Staatsburg-on-Hudson. *F. Atkins.*

Begonia octopetala hybrida Lemoinei.—This plant was introduced in the spring of 1889 by M. Lemoine, of Nancy, with the statement that it is the result of a cross made some years since between the white flowered *B. octopetala* and some of the best of the tuberous section. The corms do not differ materially from those of *B. octopetala*, and start into growth naturally in June, throwing up numerous rather coarse leaves of a character intermediate between the parents and nearly radical. The flowers, borne on rigid foot-stalks twelve to eighteen inches long, in clusters of four or five, on my plants are about two inches in diameter. Varieties sent out were pink, white and magenta. Each plant throws up five to eight flowering stems. The variety Anemone came into bloom in October, followed by Fleur d'Automne in November, but at the end of the month the variety Ville de Nancy shows no sign of blossom, though apparently as strong as the others. The flowers have all been males on my plants. As the leaves and flowers, thrown well above the foliage, have a distinct and pleasing port, this cross is likely to prove of some value in the fall when the hybrid tuberous kinds are about over, though one regrets the absence of female flowers, so that with the vigor of the Octopetala parent we might infuse more size and substance into the blooms. Such further crosses might also refine the foliage. *B. octopetala* is somewhat impatient of root confinement, and perhaps this hybrid could be successfully cultivated planted out on a green-house bench, though in such a position

it would occupy valuable room in return for a comparatively short season of bloom. If the varieties of new winter-blooming hybrids of *B. Socotrana* continue to improve and increase in variety, the Begonia season for large blooming tuberous kinds will be so extended that there will be little difficulty in securing a continuous display of these showy flowers during the entire year.

J. N. Gerard.

Elizabeth, N. J.

Forcing Asparagus.—I prefer roots three or four years old for forcing; but the age is immaterial, provided a vigorous growth has been made the previous season. The roots are originally planted out in rows five feet apart and a foot apart in the row, covered with three inches of soil, and cultivated as for an ordinary crop. When wanted for forcing the roots are plowed out, with as little damage to them as possible. In neighborhoods where Asparagus is grown for market, farmers will often plant as above, and then, in the third or fourth year, will plow out every other row to be used for forcing, leaving permanent rows ten feet apart. At this distance the ground can be thoroughly tilled, and abundant light, warmth and air will make strong crowns, so that an early crop of the first quality can be expected. Roots to be forced are placed in a pit under the benches and heated with hot water. They are placed on two inches of soil, and covered with four to five inches to blanch the shoots. Cutting will be in order about fifteen days after the roots are put in, and the same roots will produce profitable shoots for six weeks. Asparagus can be forced on greenhouse benches, in frames or in hot-beds, where the manure is not too fresh, so as to generate too much heat and steam. I have seen the best of "grass" grown in a common frame, with eighteen inches of leaves and manure, to ferment and give heat, and a covering thrown over the frame at night. It should be remembered that Asparagus starts with very little heat, forty-five degrees being sufficient to start it in the soil.

Jobstown, N. J. *J. G. Gardner.*

The Forest.

Among the Siskiyou Forests.

I HAVE just returned to San Francisco from a visit to the Mount Shasta region, which, as I should explain, is north of Shasta County, in Siskiyou. Although it was the middle of November, there was no snow in Strawberry Valley at the foot of Shasta, the air was dry and warm, the roads were excellent, and the Indian summer was in its lovely prime.

I am told that the sales of timber land made this year are greater than for any previous three years. Three new saw-mills will begin operations next spring. A broad gauge railroad is being built from Anderson, Shasta County, about twenty miles north, to meet a thirty-mile flume, tapping the heart of the finest forest of Pinus Lambertiana in northern Shasta. It is said that the four or five San Francisco gentlemen who are pushing this enterprise own 30,000 acres of the best Pine-lands of the district lying between Mount Shasta and Mount Lassen. Four or five years ago it was considered perfectly inaccessible and worthless. Hardly a word of opposition would have been raised if it had then been withdrawn from sale. I was offered five thousand acres of Sugar Pine and Yellow Pine, in 1887, for two dollars an acre in this district. Now it could not be bought for ten times the sum.

Californians have had dreams of a great Mount Shasta Park, some fifty or sixty miles square, including the head waters of the Sacramento, McCloud, Trinity, Shasta and other great rivers. But it was merely a subject for table discussion, and was never taken up and made a living issue on which men had to take sides. And now, if not already too late, it soon will be. The Southern Pacific Railroad Company, whose Oregon line passes through these forests, has the greatest individual interest in their preservation. There is no forest district in California more interesting to the fisherman, the hunter, the botanist, and the lover of nature; no district of more importance to the city dwellers; no region more closely connected with the agricultural prosperity of the great central valleys; but no one in California is "making a fight" for the Shasta Park. Senator Stanford is reported as saying, recently, that he had not known how fine the Pines of Mount Shasta were, and that he had thought of buying 1,200 acres, and keeping axe and fire out of it; but the saw-mills were already in the tract he wanted, and nothing has yet been done in the matter.

In the forest near Sissons, the leading trees are *P. Lambertiana, P. ponderosa, Pseudotsuga taxifolia* and *Libocedrus decurrens;* of these the *P. ponderosa* is most numerous. Among the young trees springing up in the forest, the Douglas Spruce seems most abundant, the Libocedrus next, and the *P. ponderosa* third, while the *P. Lambertiana* is hardest to find. The trees grow in little groups, no two alike, but all attractive in the highest degree. Where the sheep have been kept out, as in the largest tract I saw, there are millions of seedlings visible to a close observer, and their roots are so fibrous in this rich soil that I should believe in their easy removal. The proportion of Douglas Spruces is even greater among these yearlings than among those of five or ten years of age; when the Pines are destroyed, this will be chiefly a Spruce forest.

On the edges of the valley and on the lower mountain slopes, where the lumbermen are doing their heaviest work, the forests are largely of the Red Fir of California (*Abies nobilis*), with the *A. grandis*, and the great Pines before named. Pines, Firs, Spruces and all the magnificent conifers of the district must soon disappear. The groups of small *Cupressus McNabiana*, discovered by Jeffreys many years ago, some fifteen thousand feet above the valley; the alpine Pines, higher up to the snow line, *P. monticola, P. Balfouriana*, and the graceful *P. albicaulis*, dwarfed to a mere white-stemmed shrub, will probably escape destruction because of the comparatively small amount of actual timber they can furnish.

There are thousands of cords of two-foot wood piled up along the railroad track. It sells at two dollars and a quarter a cord, delivered at the siding. It is not from refuse, or stumpage, or Pine-tops; it is clean, straight pine from the best part of the trunks. The wood-chopper takes every large tree just as surely as the lumberman does. These immense piles of cordwood are all "No. 1" white and yellow pine. The stumps stand in the valleys and on the slopes, the trees having been cut off at a height of from five to ten feet above the ground, much valuable wood being wasted; the whole top of the tree is considered worthless.

A California saw-mill is always run on a large scale. Labor is high priced, transportation is difficult, owing to the size of the logs, and so the only way to make money is to rush things. Every two or three minutes a log comes in, is squared, sliced into planks, ripped into laths, turned into broom-handles, shaved into shingles or split into scantling. It is gigantic work from dawn to dark, and sadly, strangely impressive. I have visited many of the most famous saw-mills of the coast, from the Navarro Redwoods—a million-dollar estate in Mendocino, where I have seen logs fifteen feet in diameter turned into railroad ties—to the great mills of the Pine-belt of the Sierras, and I know of nothing more calculated to make an American citizen pause and ask himself where it will end. I asked a mill-owner about it the other day, and his answer was: "When we have cut it all off we will go to Alaska."

"But the people want these forests left."

"The people don't care. Every settler within ten miles of my mill wants to sell me trees at a dollar apiece. The state doesn't care or it would have been saved, at least the school sections. The country don't care or we should hear from it. There is money in the lumber business, and every tree has got to go. Sorry for the feelings of the fellows who didn't know enough to get timber-land when it was cheap."

In the Mount Shasta region there are twenty-two species of conifers, and an observer from the Smithsonian listed 103 species of birds. There are great glaciers, hot, cold and mineral springs, mountain lakes, extinct craters, and all that goes to make the region "the keystone mountain mass" which upholds the northern arch of coast range and Sierra. The "Shasta Park" idea was a fine conception, but no one has taken a step towards its fulfillment. Is it indeed true that "nobody cares," and that nothing can be done to save these forests until another generation has been educated by hard necessity to a knowledge of the issues involved?

Niles, Cal. *Charles H. Shinn.*

Correspondence.

Trees in the James River Valley.

To the Editor of Garden and Forest:

Sir.—A recent visit to the James River region, in Virginia, afforded me the chance of seeing and measuring some of the most remarkable trees of the valley.

Dr. Mohr's interesting paper in a late number of Garden and Forest calls to mind a Pecan-tree I saw at Lower Brandon, on the south bank of the James. It measured, at four feet above the ground, sixteen feet and four inches in girth. For a station so far north and east this seemed unusual, especially when I remembered that there is a reasonable assurance that the tree grew from a nut planted but a little over a century ago by an ancestor of the present owners of the estate.

Towering above all its associates, it had ample room for expansion, and the result was a vast spreading mass of limbs and foliage instead of the narrower spire-like top seen in the forest

specimens. It bears well, and the nuts are regularly expected as one of the spontaneous products of the place. On the same ground were several smaller trees (by comparison), though considered in themselves they were large. These all came from the seed of the older tree. The soil is a rich sandy loam.

Ulmus alata is very common at the water's edge near Lower Brandon. So far as my observations there convinced me of anything concerning the corky wings on the branches of the tree, I thought that these excrescences were much more common on the specimens whose growth had in some way been interfered with. I sought in vain for them on the branches of two vigorous individuals which grew on good soil and in abundant sunlight; but, on the other hand, in the trees which grew in the thicket, or in places where they had been exposed to mutilation, corky wings were quite conspicuous.

Pinus Tæda, of course, grew commonly enough in suitable places. What most struck me was its vigorous growth and the size it attained so far north. Judging from the plant life, I should say that the valley of the James was disproportionately warm as compared with Philadelphia. Harvest is over there, and the grain under shelter, or in the bags, before we on the hill-sides of southern Pennsylvania have commenced to cut it. I am convinced this somewhat abrupt change to a more southern appearance of the trees is testimony in the same direction.

University of Pennsylvania, Philadelphia. *J. T. Rothrock.*

Melothria pendula.

To the Editor of GARDEN AND FOREST:

Sir:—The article on *Melothria punctata* in GARDEN AND FOREST of November 20th reminds me that it may be interesting to some northern readers to learn that our native Wild Gherkin (*M. pendula*) is a very handsome climber bearing yellow flowers of small size, followed by a profusion of black fruits resembling tiny cucumbers. This plant is common in clearings, more especially in rich soil, where, in some cases, it entirely covers the ground with a dense mat, producing quantities of fruits, which are made into most delicate pickles. Although usually running on the ground, this plant will climb a trellis, or any object placed for its use. In rough land the vine covers small objects, hiding their unsightliness. The leaves are "cordate, with from three to five angular-toothed lobes," being as handsome as those of *M. punctata*, and, as seed is freely produced, they can be had in any desired quantity. The plant is an annual, and lasts throughout the summer.

Manatee, Fla. *E. N. Reasoner.*

Recent Publications.

Scientific Papers of Asa Gray, selected by Charles Sprague Sargent. Vol. I., Reviews of works on Botany and related subjects, 1834–1887. Vol. II., Essays: Biographical Sketches, 1841–1886. Two volumes octavo. Vol. I., pp. viii, 397. Vol. II, pp. iv, 303. Boston and New York: Houghton, Mifflin & Company, 1889.

The writings of Dr. Gray may be roughly divided into three classes, viz.: Contributions to systematic botany, instruction books for students, and miscellaneous papers. By the first class of writings, principally, he won his place among the princes of that branch of learning which its votaries affectionately call "nostra scientia amabilis;" by the second he has educated a generation of botanists in a wider field than his own native land, and by the third he achieved high rank and wide reputation among literary people outside of the realm of natural history. The present volumes contain a large and judicious selection of these miscellaneous papers, beginning at a time when the Natural System, as illustrated by Lindley, was beginning to displace the purely arbitrary and artificial system of Linnæus, and continued down to the day when the victory had been so long won that the strife was forgotten, and men were now seeking to know what system and structure may teach of vital truth, rather than to pit one system against another. For as the chemistry, the geology and the electrical science of half a century ago are remembered to-day only as leading up to what men now know and do, so the botany of that time is replaced by broader and more intensely interesting principles, facts, theories and researches.

This progressive change in the scope and aims of botanical science becomes very evident to any one who will read these volumes with even only careless haste, while the more careful reader will find more than enough to interest and instruct him in the arguments and facts presented, and will, moreover, be charmed with the clear and simple style of a master of English prose. Dr. Gray's "Reviews" were seldom confined to an account of the book under consideration; but he usually took up the subject presented, brought out new or forgotten facts to illustrate or to confute the theories of the writer, and rarely failed to say a good deal which the author reviewed could read with profit. This is especially true of his reviews of the successive writings of Mr. Darwin, and of De Candolle's works on phytography and on the origin of cultivated plants.

The second volume of these selected papers contains fourteen "Essays" and thirty-eight biographical sketches. The first of these essays was published in 1841, and is an account of the chief European herbaria as they then existed, when the great herbarium at Kew was yet to be founded by the transfer of the collections of Sir William J. Hooker, at that time residing in Glasgow. Several of the later essays were addresses delivered on particular occasions, as that on "Sequoia and its History," which was the address of the retiring President of the American Association for the Advancement of Science, and was delivered at Dubuque, Iowa, in 1872. Among the subjects of the biographical sketches are the names of Robert Brown, Alexander Humboldt, William Jackson Hooker, Darwin, George Bentham, and our own Torrey, Sullivant, Agassiz, and Dr. Gray's intimate associate and neighbor, Jeffries Wyman.

We found but few typographical errors in reading these handsomely printed volumes and made no note of them at the time. Still they do exist, and the Riverside proof-readers ought not to have let such slips as *Heloragea* and *Hibridization* escape their attention.

It is to be hoped that this series of "Selections" will be continued. Some of Dr. Gray's earlier papers descriptive of new plants are not now to be obtained, and to reprint them would be a great favor to working botanists.

Periodical Literature.

Mr. Bradford Torrey has never written a more charming essay than "December Out-of-Doors," published in the current number of the *Atlantic Monthly*. It begins with a word of praise for November mildness and sunshine, referring, naturally, to the November of 1888, not to the gloomy, pouring month of 1889. The December of 1888, which Mr. Torrey then chronicles more at length, was almost as favorable to out-door rambling, for at its end, he says, he found that, "omitting five days of greater or less inclemency, I had spent nearly the entire month in the open air. I could hardly have done better had I been in Florida." The greater number of the pages in which the charms and the *trouvailles* of the month are recorded tell us of birds and their ways. But a few at the end speak of the December flowers on the northern Massachusetts coast. We are not surprised to hear that their number was "limited." It is more unexpected to be told that so many as sixteen different sorts of plants were then and there found blooming in the open air. The hardiest of all local plants, Mr. Torrey thinks, is the common Chickweed (*Stellaria media*), and the next a Groundsel (*Senecio vulgaris*). Another kind of Groundsel (*Senecio viscosus*, a recent emigrant from Europe, very locally established) was likewise counted in bloom, and the thirteen remaining heroes were Shepherd's Purse, wild Pepper-grass, Pansy, Mouse-ear Chickweed (*Cerastium viscosum*), Knawel, common Mallow, Witch-Hazel, Cinquefoil, Many-flowered Aster, Cone-flower, Yarrow, Fall Dandelion and Jointweed. The Cinquefoil was *Potentilla Norvegica*, not *P. argentea*, as Mr. Torrey thinks might more reasonably have been expected. Knawel kept on flowering till the middle of January, and *Senecio vulgaris* "all through December and January, and I know not how much longer." One-half the sixteen were plants that have been introduced from Europe, and six were members of the Composite family. The author's description of his experience with the Witch-Hazel is too pretty not to be quoted entire: "Such Witch-Hazel blossoms as can be gathered in December are, of course, nothing but belated specimens. I remarked a few on the 2d, and again on the 4th; and on the afternoon of Christmas, happening to look into a Hamamelis-tree, I saw what looked like a flower near the top. The tree was too small for climbing, and almost too large for bending, but I managed to get it down; and, sure enough, the bit of yellow was a perfectly fresh blossom. How did it know I was to pass that way on Christmas afternoon, and by what sort of freemasonry did it attract my attention? I loved it, and left it on the stalk in the true Emersonian spirit, and here I do my little best to embalm its memory."

We should be glad if our readers in various parts of the country would follow Mr. Torrey's example and catalogue such plants as they may find in bloom in midwinter; and if the coming season should prove more inclement than the last, their lists, although shorter, would be even more interesting.

Notes.

The fourteenth annual meeting of the Iowa State Agricultural Society will be held at Glenwood on the 10th, 11th and 12th instant.

On one of the coldest days of last week we received from the gardens of Dr. George Thurber, of Passaic, New Jersey, some large and perfect flowers of *Helleborus niger altifolius*, which had grown out-of-doors with no protection.

It is a fact significant of the present tendency of horticultural fashion that the receipts from visitors at the Chrysanthemum exhibition held at Boston last month exceeded the receipts taken at all the other exhibitions combined held by the Massachusetts Society during the year.

The illustration of the Chrysanthemum Mrs. Carnegie, on another page of this issue, is taken from a photograph of one of a collection of remarkable flowers exhibited at the late Chrysanthemum show in Boston by James Brydon, gardener to Mr. Simpkins, of Yarmouth, Massachusetts.

According to specimens received from Professor Gerald McCarthey, of Raleigh, and from Mr. G. W. Lawrence, of Fayetteville, North Carolina, it appears that hogs of that state are fond of the fungus, *Clathrus columnatus*, Bosc, a species which has the repulsive odor found in nearly all the order *Phalloideæ*. Several hogs have been killed by indulgence in this unæsthetic, and, to human taste, nauseating diet.

All foreign journals notice the fact that the taste for single flowers is rapidly growing. Single Dahlias, Chrysanthemums, China Asters, Cinerarias and Pyrethrums are now in demand, whereas a while ago only the double varieties were liked. So unfamiliar, indeed, was the single Dahlia a few years ago in Germany that florists who displayed it in their windows were constantly asked its name. Now it is one of the most popular of flowers.

Plants of *Croton Alabamensis*, described in another column, were sent last spring to the Arnold Arboretum by Professor Smith. They are now well established, but have not, of course, been tested yet in the open ground in winter. The contrast between the brilliant green on the upper surface of the leaves with the silver whiteness of the young branches and the under surface of the leaves makes the Alabama Croton an exceedingly attractive plant, and its cultivation desirable.

Work has been begun on the Memorial Arch, at the entrance of Prospect Park, which is to commemorate the citizens of Brooklyn who fell in the war of the rebellion. The design selected from the many competitive essays presented last winter is the work of Mr. John H. Duncan, architect, of this city. It is the same which was then pronounced in GARDEN AND FOREST to be not merely the best for the purpose, but so far above all its rivals that there was no room for discussion with regard to it. Who is to execute the groups of statuary which should adorn it we have not yet learned.

Those elegant Cape bulbs, the Freesias, deserve their growing popularity, both on account of their graceful growth and their delicious fragrance. There are some plants of remarkable vigor just now in the green-houses of Mr. John Thorpe. They are in five-inch pots, with five bulbs in each pot, and each plant is twenty inches high, with leaf-blades three-fourths of an inch wide and sheaths of the same width at the base. They were potted on the 6th of July in soil of sandy loam, with a quart of bone flour to each half bushel of soil, and there is little doubt but that the plant food in the bone did much to nourish them into their unusual growth.

One of the best forms of *Elæagnus umbellata* in cultivation is that introduced into this country from Japan by Mr. Thomas Hogg. The largest specimens of this plant in the Flushing Nursery, where it was first planted, are now twelve or fifteen feet high and form stout, wide spreading bushes. It is almost the last deciduous plant to lose its leaves in the autumn, and the fruit, which is freely produced at Flushing, is high colored and attractive in appearance, and possesses rather an agreeable sub-acid flavor. The Indian form of this widely distributed and variable species, known in gardens often as *E. angustifolia*, is a far less hardy and in every way a less desirable plant.

An interesting and attractive form of *Cattleya Bowringeana*, with pale mauve colored flowers, is now blooming for the first time in Mr. Ames' garden at North Easton. In the same collection two plants of *Vanda Kimballiana* are in bloom, and with them a plant of *Vanda Amesiana*. The flowers of the latter plant, although less showy in their contrast of colors than those of Mr. Kimball's Vanda, are deliciously fragrant, a single spike of bloom perfuming a whole house. This delightful fragrance and the fact that this species blooms at a season of the year when comparatively few Orchid-flowers are seen, make *Vanda Amesiana* a most desirable plant.

The first of the twelfth course of the free Michaux Forestry lectures was delivered by Professor Rothrock, in the hall of the Philadelphia Academy of Natural Sciences, on the evening of the 4th instant. The subject was "Civilization as Related to Surroundings." The other lectures of this course will be given on the succeeding Wednesday evenings, and will treat of "Some Neglected Trees," of "Some Famous Trees," of "Trees Along Our Roadsides," of "Trees In Our Yards," of "Trees We Are Exterminating," and of "Practical Forestry." These lectures are given under the auspices of the American Philosophical Society, and are provided for from the income of the fund left to that Society by Francois André Michaux, the distinguished historian of American trees.

The new vegetable, *Stachys affinis* (or *S. tuberifera*), which is called "Crosnes" in France, seems to be winning its way in Germany. It was put to proof in the proverbial way at a recent meeting of the Society for the promotion of Horticulture in Berlin, being eaten both boiled and roasted. Some who tasted it pronounced roast potatoes much better, but the majority, says a German journal, declared that the Stachys tubers have a "fine, peculiar taste, and should be highly recommended to the epicure." An official of the Berlin Botanic Garden stated that a rumor to the effect that the new vegetable was being propagated there brought hundreds of requests for it, and that he was obliged to have hectographed circulars prepared explaining that the report was untrue.

We must listen to foreigners to learn about American manners and customs. Here is an example, quoted from a German horticultural journal of the most serious character: "The love for oranges in America has led to the introduction of picnics that are called 'Lemon Parties.' Each attendant at such a picnic brings a lemon or orange and gives it to the general 'squeezer.' This official cuts the fruit in two, collects and counts the seeds and then prepares a bowl of lemonade. Each person then guesses the total number of seeds collected, he who is nearest right receives a prize, usually a costly lemonade goblet; he who is furthest wrong is called 'the Bubi' (booby?) and given a lemonade squeezer. Those whose lemons have contained the most and the fewest seeds likewise receive prizes, and the ladies present are always adorned with yellow Roses and ribbons."

The rare *Cypripedium Fairieanum* is now in flower in Mr. Ames' collection. This species, although it has been known for thirty years, is one of the rarest plants in cultivation. All that is known of its origin is that it was obtained at a sale at Stevens' auction rooms, in London, of a lot of East Indian Orchids sent from Assam. It has never been seen in its native country, although various efforts have been made to rediscover it, one enterprising English dealer having expended, it is claimed, no less than $25,000 in a vain attempt to obtain a supply of native plants. The flowers are not large, but they are exquisitely colored and penciled, and are among the most attractive of the genus. *Cypripedium Fairieanum*, although it has been considered generally a delicate plant, and difficult to manage, has impressed itself on several hybrids, of which the best known is *C. vexillarium*, obtained by a cross with *C. barbatum*.

The English journals announce the death, in his ninetieth year, of Robert Marnock, the foremost landscape-gardener who has appeared in England during the second half of this century, and one of the best exponents of the natural style. He served his apprenticeship as a gardener and found his first public employment in designing the Sheffield Botanic Garden, of which he became the first curator, not a bad training for a landscape-gardener, and one which led to his selection, in 1839, to lay out the garden of the Royal Botanic Society in Regent's Park in London. This established his reputation, and he has since been kept busy in the practice of his profession until his retirement a very few years ago. Marnock was strong in artistic feeling and in his practical knowledge of plants; and here was the secret of his success. The artist and the gardener worked together, and his creations were gardens gracefully and tastefully arranged, but gardens in which plants were always the principal and controlling feature. It never fell to his lot to make any great urban pleasure ground, or to design one of those broad landscapes which tax the highest creative skill of the artist, but in his particular field Robert Marnock was, in his day, without a rival. As a man he was singularly modest and attractive.